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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/480,689	01/11/2000	Min-Young Heo	06192.0102	4622

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EXAMINER

RAO, SHRINIVAS H

ART UNIT PAPER NUMBER

2814

DATE MAILED: 05/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/480,689

Applicant(s)

HEO ET AL.

Examiner

Steven H. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 7-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 17
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Response to Amendment

Applicants' amendment filed on Feb. 04, 2003 has been entered on March 06, 2003.

Therefore claims 7-9 as recited in the amendment of February 04, 2003 are currently pending in the application.

Specification

The previous requirement that the specification line 1 be amended to state that the instant application is a CPA application that claim priority from parent case 09/480,689. See MPEP 210.11, etc. Appropriate correction is required.

The above objection was also previously made and the applicants' did not respond to it, thus making the amendment technically not responsive, however it appears that Applicants' made a genuine effort to respond to other issues and therefore this issue is overlooked but however the objection is made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

A. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonora et al. (U.S. Patent No. 5,570,990, herein after Bonora) previously applied for reasons previously stated and those set out below.

Claims 7-8, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonora et al. (U.S. Patent No. 5,570,990, herein after Bonora).

With respect to claim 7, Bonora describes a method of moving substrates in and out of a manufacturing process including an automatic and a manual transfer devices operated by instructions from the operator (Bonora Abstract lines 1-8) wherein the process apparatus includes a loader with a port (Bonora Abstract last line) a job table Bonora fig. 16 # 420) including the steps of: transferring the cassette to the process apparatus through automatic or manual transfer device (figs. 7, '15) when the port is available (col. 11 lines 60-67) ; transmitting a start signal to automatic transfer device loader when the cassette is transferred to the process apparatus. (Col. 11 lines 60-65); loading the cassette to the port from automatic transfer device (col. 5 lines 23-27); loading the cassette to the port according to the operator's instructions when the cassette is transferred. (Fig. 7 box 212); determining whether cassette is detected on port (fig. 7 box 216) and determining a communication start signal (fig. 7 # 200) and setting the process apparatus in automatic transfer mode when the signal is detected (fig. 10, col. 8 lines 30-35) and manual mode when there is no signal (figs. 4 and 10 col. 7 lines 11-14 and col. 8 lines 35-56 describe manual and automatic movement of the same parts and it will be inherent to provide a signal to switch from manual to automatic mode or vice versa).

The limitation (in claim 7) of " Selectively transmitting a communication start signal to the load are by the automatic transfer device only when the cassette is transferred to the process apparatus through the automatic transfer device ".

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Bonora in col. 11 lines 26-40 states:

In operation, the clean room operator can handle container 366 using hand 364. Instead of placing container 366 on a cart, the loader stocker assembly can be moved, with container 366, to processing station 342. The loader stocker of FIG. 15 could be fully automated using the motors, gear assembly, bearings, electronics, intelligent data cards, and communication means described above. One alternative is to use the intelligent data cards and container tracking system described above so that after a container is removed from a port, the operator is notified by a display or monitor where to bring the container. A fully automated system would automatically bring the container to the next processing station after receiving instructions or data from the processing tool which the container was taken from.

From the above it is seen that Bonora in its fully automated system (i.e. recited automatic transfer device) will detect the presence of the cassette in the first processing station and only then Selectively send signal to forward the cassette to the next processing station (i.e. Applicants' recited Selectively transmitting a communication start signal to the load are by the automatic transfer device only when the cassette is processing station (i.e. Applicants' recited Selectively transmitting a communication start signal to the load are by the automatic transfer device only when the cassette is transferred to the process apparatus). It is noted that if the sensor does not sense cassettes in the container the start signal to bring it to the next processing station will not given.

Therefore all of the presently recited limitations of presently recited claim 7 are taught by the applied reference Bonora.

With respect to claim 8, the step of loading the cassette to the port from the automatic transfer device including the steps of determining whether a communication signal has been received (col. 7 lines 20-25) and requesting a cassette loading upon receipt of the signal (col. 3 lines 18-22).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bonora as applied to claims 7-8 above, and further in view of Hwang et al. (U. S. Patent No. 6,238,160 B1, herein after Hwang).

With respect to claim 9, the method moving substrates in and out of a manufacturing process. Bonora does not specifically describe a chucking step.

However Hwang in its abstract lines 3-11 describes a chucking of the wafer or the like being electro statically chucked in a processing chamber as part of the wafer, etc. transporting operations to securely hold the wafer, etc. in a fixed position within the chamber.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Hwang's chucking step in Bonora's method to securely hold the wafer, etc. in a fixed position within the chamber. (Hwang col. 1 lines 17-18).

Chucking the cassette according to operator instruction's in the manual process mode (Hwang col. 2 lines 43-59, wherein the switches! controller e.g. 30 can be manually controlled).

Reading the cassette ID by a ID reader on the loader (col. 12 lines 17-22).

Checking the position and number of the glass substrate in the cassette on the port (col. 12 lines 19-22).

Response to Arguments

Applicant's arguments filed 8/23/02 have been fully considered but they are not persuasive for reasons set out in detail below ;

Applicants' first contention stated in paragraphs 3-5 of page 2 of the response is not completely understood because in figures 10 and 11 reference numeral 130 is a cart (Bonara col. 6 line 21) as not a manual mobile loader stocker.

Bonara describes a mobile loader stocker 110 and the operation of the mobile loader stocker is described in fig. 7 (block diagram) and in col. 7 lines 37-col. 8 line 12 reproduced below for ready reference :

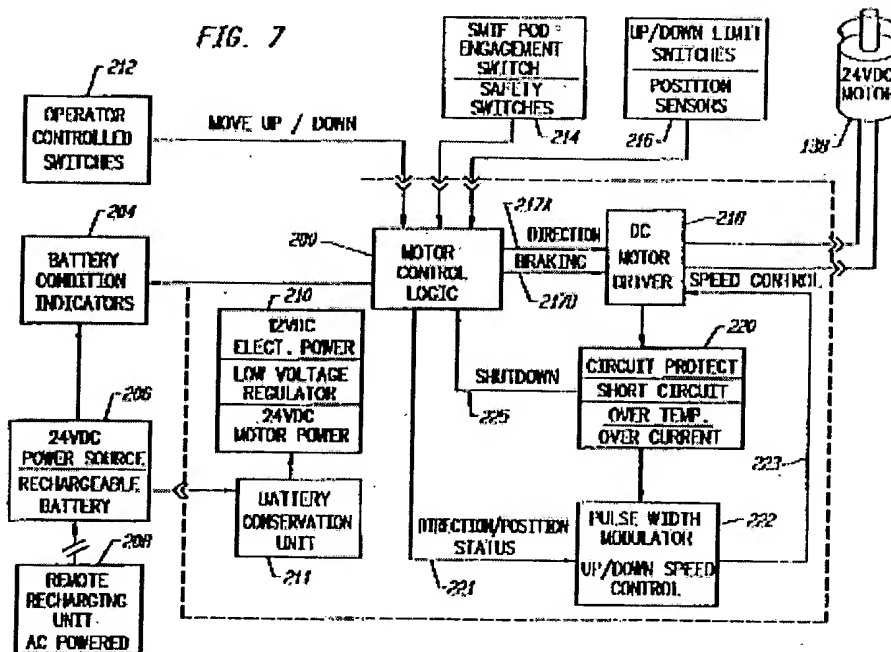


FIG. 7 shows the block diagram of the electronics for the mobile loader stocker. The focus of the electronics is motor control logic 200, which can be a microprocessor or hard-wired logic. The electronics are powered by a 24 V power source 206, which is a rechargeable battery. Battery condition indicators 204, controlled by motor control logic 200, let the operator know the current state of the battery (e.g. charged or needs to be recharged). When battery 206 needs to be recharged, it is removed from cart 130 and replaced by a charged battery. The uncharged battery is then brought to a remote charging unit 208 which is A/C powered for recharging the battery. Connected to power voltage regulator 210 and power source 206 is a power conservation unit 211. When the clean room operator has not pushed buttons 113A or 113B for more than 5 seconds, power is turned off to the motor and the majority of the electronic circuitry. As soon as one of the buttons 113A or 113B is pushed, power is restored. This feature allows the life of the battery to be extended between recharges.

Motor control logic 200 determines whether to raise or lower shaft 126 based on operator controlled switches 212, which include buttons 113A and 113B, described above. Additionally, container engagement switch 214, as described above, is used to prevent the motor from raising shaft 126 when hand 112 is not engaging box 20. Position sensors 216 are used to prevent the motor 138 from raising shaft 126 past the upper allowable limit for vertical motion or lowering shaft 126 below the bottom limit for vertical motion. Motor control logic sends two signals to a D/C motor driver 218. The first signal, direction 217A, communicates to the motor driver 218 which direction to move the

shaft 126. Breaking signal 217B communicates to the motor driver 218 when to stop motor 138 and prevent shaft 126 from moving. Driver 218 controls current to the motor 138 and direction.

Motor control logic 200 also sends directions/position status signal 221 to Pulse Width Modulator 222, which controls the speed of motor 138. Pulse Width Modulator 222 sends speed control signal 223 to driver 218 to communicate the proper motor speed. Protection circuit 220 helps protect against short circuits, over temperature, and over currents. When a hazard is detected, a shutdown signal 225 is sent to motor control logic 200.

FIG. 8 shows a side view of mobile loader stocker 110 engaging one container 18-1 and storing two other containers 18-2 and 18-3. The shaft 126 is in a raised position as compared to FIG. 4. Inside container 18-2 is cassette 14-2. Inside container 18-3 is a cassette 14-3. A clean room

Further description of the recited, "selectively transmitting a communication start signal to the loader by automatic transfer device only when the cassette is transferred to the process apparatus through the automatic transfer device" is at col. 8 lines 35-46, col. 9 lines 2-4, 10-16; col. 11 lines 26-40, 60-67 and col. 12 lines 17-20.

Therefore Applicants' contention are not supported by the applied prior art and therefore not persuasive.

Applicants' next contention on page 3 of their response is also not clear, but appears to state that Applicants' believe that the Bonara reference does not teach/describe both the manual and automatic transfer device referring to figure 15.

However as seen in figure 15 (shown below) reference 344 shows a clean room operator performing manual loader stocker functions and described in col. 11 lines 26-30 (reproduced below).

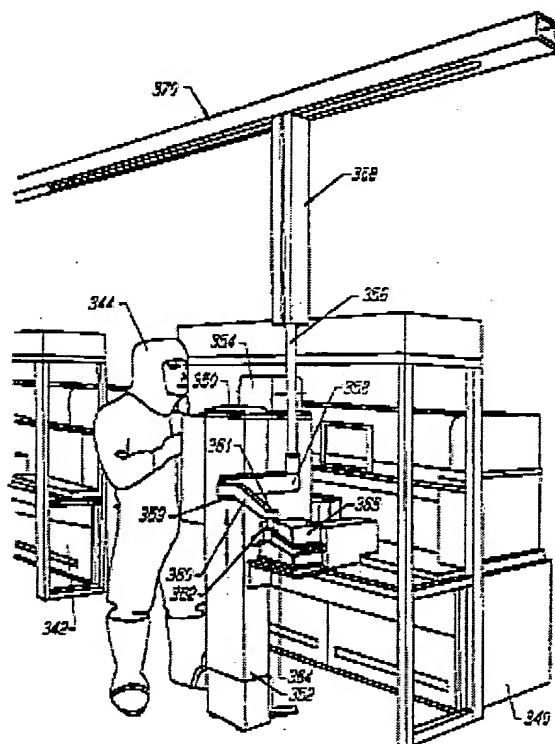


FIG. 15

In operation, the clean room operator can handle container 366 using hand 364. Instead of placing container 366 on a cart, the loader stocker assembly can be moved, with container 366, to processing station 342. The loader stocker of

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Therefore Bonara describes both automatic loader stocker and manual loader stocker and the functions are not mutually exclusive as Applicants' contend, but both are performed together is series of steps similar to that recited in the claims.

communication means described above. One alternative is to use the intelligent data cards and container tracking system described above so that after a container is removed from a port, the operator is notified by a display or monitor where to bring the container. A fully automated system would

(col. 11 lines 33-38). Therefore Bonara describes the claimed method involving both an automatic transfer device and a manual transfer device and transmitting a communication start signal only when the cassette is transferred through the automatic transfer device.

Therefore all of the presently recited limitations of claim 7 are taught by the applied references.

Claim 8 was said to be allowable because it depends upon claim 7, however as shown above claim 7 is not allowable and therefore claim 8 is also not allowable.

Claim 9 was alleged to be allowable as Hwang fails to teach transferring (sic. transmitting) a communication signal only when a cassette is transferred to the processing equipment (apparatus) through automatic transfer device.


However as shown above under claim 7, Bonara describes transmitting a communication start signal only when the cassette is transferred through the automatic transfer device. (see above).

Therefore all of Applicants' contentions are not persuasive.

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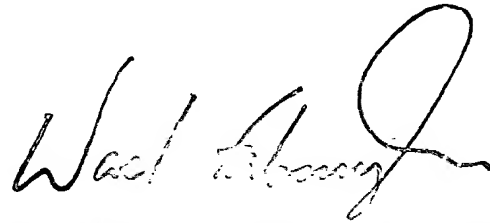
Any inquiry concerning this communication or earlier communication from the examiner should be directed to Steven H. Rao whose telephone number is (703) 306-5945. The examiner can normally be reached on Monday- Friday from approximately 7:00 a.m. to 5:30 p.m.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956. The Group facsimile number is (703) 308-7724.


Steven H. Rao

Patent Examiner

May 16/2003


SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2000